

Transcript of the Testimony of
VALERIE J. HARWOOD, Ph.D.

1/29/2008

W. A. DREW EDMONDSON, et al.

vs.

TYSON FOODS, INC., et al.

4:05-CV-00329-TCK-SAJ

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IN THE UNITED STATES DISTRICT COURT FOR THE
NORTHERN DISTRICT OF OKLAHOMA

W. A. DREW EDMONDSON, in his)
capacity as ATTORNEY GENERAL)
OF THE STATE OF OKLAHOMA and)
OKLAHOMA SECRETARY OF THE)
ENVIRONMENT C. MILES TOLBERT,)
in his capacity as the)
TRUSTEE FOR NATURAL RESOURCES)
FOR THE STATE OF OKLAHOMA,)

Plaintiffs,)

vs.)

4:05-CV-00329-TCK-SAJ

TYSON FOODS, INC., et al,)

Defendants.)

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THE VIDEOTAPED DEPOSITION OF
VALERIE J. HARWOOD, Ph.D., produced as a witness
on behalf of the Defendants in the above styled and
numbered cause, taken on the 29th day of January,
2008, in the City of Tulsa, County of Tulsa, State
of Oklahoma, before me, Bonnie Glidewell, a
Certified Shorthand Reporter, duly certified under
and by virtue of the laws of the State of Oklahoma.

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1 Labs; how frequently do you speak with North Winds?

2 **A** I would say, on average, about once a month.

3 **Q** And do you direct their work?

4 **A** I would say I contribute to guiding their
5 work. I wouldn't say I direct it. 08:22AM

6 **Q** Okay. Were they already working in the case
7 before you or did they come after you?

8 **A** I believe that North Winds Lab came on after I
9 came on.

10 **Q** And did you recommend the hiring of them? 08:22AM

11 **A** No.

12 **Q** Who selected North Wind?

13 **A** I believe it was -- I don't know.

14 **Q** When you were going to say that you believe --
15 understanding that you don't know -- who do you
16 believe it was? 08:22AM

17 **MR. PAGE:** Object to the form.

18 **THE WITNESS:** I believe it was Roger Olsen.

19 **Q** (By Mr. Jorgenson) Let's get a complete list
20 of the labs you've interacted with in this case; it
21 might help, then I won't ask you imprecise questions
22 down the road. Will you name all labs that you've.
23 Worked with on this matter? 08:22AM

24 **A** North Winds.

25 **Q** Okay, 08:23AM

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1 this case, any person at all, that you give
2 directions to, that you tell what to do?

3 **A** I give suggestions for analysis to Roger
4 Olsen, for example, microbial analysis.

5 | Q Okay, and that's more of a collegial 08:32AM
6 | relationship?

7 | **A** That's your terminology.

8 | Q How do you define your relationship with Roger
9 | Olsen?

10 **A** I would say, yes, we are colleagues, but that 08:32AM
11 at times I do direct what decisions are made in
12 terms of the analysis in my area of expertise.

13 Q Okay. And I think I can help you out here.
14 What I'm trying to figure out what to ask you about,
15 what not to ask you about. And if you direct the 08:32AM
16 hydrogeology in the case, then we'll send a lot of
17 time on the hydrogeology; if you don't, we won't.

18 **A** I do not direct the hydrogeology in the case.
19 Anything that I have any influence over in terms of
20 where we go is the microbial water quality testing. 08:32AM

21 Q So to the extent there is microbial water
22 testing going on, are you in charge? Do you direct
23 what is done?

24 MR. PAGE: Object to the form.

25 THE WITNESS: A lot of water quality 08:32AM

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1 testing was actually completed and/or planned before
2 I came on the case and so I did not direct all of
3 the -- nearly all of the planning of the
4 microbiological testing.

5 Q (By Mr. Jorgenson) Okay. 08:33AM

6 A The --

7 Q I'm sorry, I didn't mean to interrupt you. Go
8 ahead?

9 A That's all right.

10 Q So when you came on to the case and a lot of 08:33AM
11 testing had already been done, by whom had it been
12 done?

13 A The laboratories that we had mentioned: EML,
14 FoodProtech and the mystery laboratory.

15 Q Okay, and if you remember the mystery 08:33AM
16 laboratory's name, let us know.

17 A (Nodding head up and down.)

18 Q All right, let me return to the documents you
19 provided. Did you make my handwritten notes in the
20 course of working on this case? 08:33AM

21 A I don't remember doing that. I don't make a
22 lot of handwritten notes.

23 Q Do you send a lot of e-mail in the case?

24 A Yes.

25 Q Okay. I have -- did you preserve the e-mail 08:34AM

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1 can be much lower.

2 Q Why does it matter that the cattle are fenced
3 away from it? When you say, "fenced away," fenced
4 away from what?

5 A Fenced away from the water. The closer the 11:46AM
6 animals are to the water and the more conduits there
7 are from the field into the water, then the higher
8 the potential for impact is for fecal material
9 entering the water and then getting into the
10 receiving water. 11:47AM

11 Q Are you aware of situations where cattle have
12 deposited their feces directly into the water?

13 A In the IRW?

14 Q Anywhere.

15 A Yes. 11:47AM

16 Q What impact does that have on the number of
17 viable bacteria that make it into the water?

18 A It depends, again, on the number of cattle and
19 the amount of material they are putting into the
20 stream. And then, of course, the size of the stream 11:47AM
21 matters and the composition of the substratum, so
22 obviously the more animals that are impacting the
23 stream, the higher, the greater the impact is on the
24 water pollution is going to be.

25 Q And if an animal, cow or otherwise, deposits 11:47AM

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1 its feces, let's say a hundred yards from the
2 stream, is there a difference, in your professional
3 opinion, between how those bacteria will make it to
4 the stream and the animal deposits its feces
5 directly into a stream?

11:48AM

6 **A** Yes, unless there's a stream running direct,
7 another ditch running direct, some sort of conduit.

8 **Q** Without a conduit, in this hypothetical, just
9 a field.

10 **A** Uh-huh. Then, obviously, the one that was
11 farther away would tend to have less impact.

11:48AM

12 **Q** And why is that?

13 **A** Because it would be less likely to be
14 transported into the water.

15 **Q** Right. And we have talked about temperature
16 and predation, but this case is kind of a funny
17 case, so with apologies, I'll ask this question.

11:48AM

18 Are you saying that bacteria survive in the water a
19 lot better when they are deposited hot and wet than
20 when they are deposited in dry and far from a
21 stream?

11:48AM

22 **A** If they are deposited directly into the
23 stream, then the bacteria that are there have a
24 better chance of surviving in that water better than
25 ones that were further away and dried, certainly.

11:49AM

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1 the data on which you were relying on was secured
2 using appropriate standards we discussed earlier?

3 **A** I asked for a list of the methods utilized by
4 the laboratories and I talked to the laboratory
5 managers and I viewed the data. 01:15PM

6 **Q** Do you still have that list of methods
7 utilized?

8 **A** Yes.

9 **Q** Did you provide it to the State's lawyers?

10 **A** Yes. 01:15PM

11 **Q** Could you provide it to them again if they
12 didn't give it to us?

13 **A** Yes.

14 **Q** Did you contribute in any way to the
15 development of the State's standard operating 01:15PM
16 procedures for the collection of samples?

17 **A** Minimally. I recall being asked to talk about
18 the composting of field samples, of soil samples and
19 poultry litter samples and, also, about the
20 collection of high flow samples. 01:16PM

21 **Q** Okay. So was the sampling structure set up by
22 others?

23 **A** Generally, yes.

24 **Q** Who?

25 **A** CDM and Roger Olsen's team. 01:16PM

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1 Q Did you contribute to the State's standard
2 operating procedure for sampling DNA?

3 A For sampling DNA. So for collecting the
4 samples from which we extracted DNA?

5 Q Right. 01:16PM

6 A Yes.

7 Q Tell us how.

8 A We talked about how the samples should be
9 selected and about how they should be stored, about
10 precautions taken against any contamination and 01:16PM
11 about shipping.

12 Q Did you make any suggestions that were not
13 adopted?

14 A I don't recall.

15 MR. BULLOCK: Let's take just one moment 01:16PM
16 here until we get this down.

17 MR. JORGENSEN: I'm going to turn this down
18 as low as I can. Is it bothering you?

19 Q (By Mr. Jorgenson) Did you contribute in any
20 way to the development of the State's scope of work 01:17PM
21 detailing various different scientific analyses that
22 were to be undertaken> do you know what I'm talking
23 about when I refer to the scope of work?

24 A No, I don't.

25 Q Did you have any contact with North Wind? 01:17PM

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1	A	Did I have any contact with North Wind.	
2	Q	Right.	
3	A	Yes, I talked to, spoke with their laboratory	
4		personnel and managers.	
5	Q	With whom at North Wind did you communicate	01:17PM
6		with by name?	
7	A	Jennifer Weidhaas and Tamzen MacBeth.	
8	Q	How frequently?	
9	A	I would say about once a month on average.	
10	Q	Did North Wind send you periodic updates as to	01:17PM
11		its work?	
12	A	Yes, they did.	
13	Q	How often?	
14	A	There wasn't a scheduled timing. Again,	
15		sometimes it was frequent, a couple of times a week,	01:18PM
16		when things were developing and other times it might	
17		be two months between reports or communications.	
18	Q	What form did their updates take?	
19	A	They were e-mails, Word documents or spread	
20		sheets. Usually Word documents.	01:18PM
21	Q	And did -- Sorry, I didn't mean to interrupt.	
22	A	And some spread sheets.	
23	Q	Did North Wind ever send you drafts of its	
24		reports?	
25	A	Yes.	01:18PM

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1 don't really mean much.

2 Q What kind of comments would you make in these
3 drafts?

4 A I might ask a question like can you clarify
5 here or I might say do you mean microgram or 01:19PM
6 microliter or I might say can we put a figure in
7 here so we can explain this better or I might say I
8 don't understand this part; let's go through it,
9 things like that.

10 Q All right. Let's move to the sampling 01:19PM
11 protocol. So for your microbial source tracking
12 work, is it true that various samples were taken?

13 A Yes, it's true.

14 Q Who participated in making the decision about
15 what samples to take? 01:20PM

16 A That was -- it was Roger Olsen, David Page and
17 I.

18 Q Who decided --

19 A Let me clarify something. The samples
20 actually, when we first started -- okay, I'm not 01:20PM
21 sure of the date, but at some point during the
22 microbiological sampling we started keeping DNA
23 samples, extracting them, keeping them aside in case
24 we wanted to do something with them later on. So a
25 lot of these sample were actually collected 01:20PM

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1 **A** Yes.

2 **Q** You, alone, or anyone else?

3 **A** Well, of course, Tamzen and Jennifer

4 participated fully in preparing it, and then we

5 had -- I know that when we talked, David Page, Roger 01:49PM

6 Olsen and I, talked about things to include that

7 would make -- that would be inclusive of everything

8 that we had done, so we all talked about that to

9 make sure that all the material was here that would

10 be necessary. 01:49PM

11 **Q** And is this report dated December 2007 your

12 final report?

13 MR. PAGE: Object to the form.

14 THE WITNESS: It is the final report of

15 this report. Now, there may be -- well, we're still 01:50PM

16 working on it, on the samples, so there could be

17 more added later on.

18 **Q** (By Mr. Jorgenson) Are you gathering

19 additional samples?

20 **A** No, not to my knowledge. 01:50PM

21 **Q** Are you testing the samples that have already

22 been gathered?

23 **A** Yes.

24 **Q** What are you testing them for?

25 **A** The Brevibacterium biomarker. 01:50PM

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1 Mountains. Are you familiar with that at all?

2 **A** Yeah, but it's not in the Illinois River
3 watershed.

4 **Q** No, we're talking about wild areas.

5 **A** Oh, yeah, okay. I thought we were talking in 04:17PM
6 the Illinois River watershed.

7 **Q** Are you familiar with the Rocky Mountain
8 National Park?

9 **A** Sure.

10 **Q** Do you know whether or not it's recommended to 04:17PM
11 drink water out of the streams in the high mountains
12 of that park?

13 **A** Not without filtration.

14 **Q** Why would that be?

15 **A** Possible presence of Giardia. 04:17PM

16 **Q** You told us that you were involved in some
17 respect in the creation of the sample protocols for
18 this project; do you recall that?

19 **A** I collaborated on them.

20 **Q** Did you observe any of the sampling at any 04:17PM
21 point in any of this project?

22 **A** No, I didn't.

23 **Q** Did you observe any videos of any of the
24 sampling?

25 **A** No, I didn't. 04:17PM